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Contribution to the knowledge of Afrotropical Tethinidae. VI. A new species of *Afrotethina* Munari, 1986 from Namibia, with a key to the species of the genus and new records of Tethinidae (Diptera) from the Afrotropical Region.

by

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ABSTRACT

Eight species of Tethinidae are recorded from the seashores of Namibia, South Africa, Mozambique and Madagascar, some for the first time. *Afrotethina persimilis* (closely related to *A. stuckenbergi* Munari, 1990), is described as new. A key to the six species of *Afrotethina* Munari is presented.

INTRODUCTION

The tethinid fauna of the Afrotropical Region is very poorly known. Cogan (1980) recorded ten species, a few of which have later had some nomenclatural changes. Munari (see references) established a new genus, described some new species and clarified the taxonomic status of a few critical taxa (establishing some synonymies).

As far as Indian Ocean seashores of the Afrotropical Region are concerned, the commonest genera of Tethinidae are, without doubt, *Afrotethina* Munari, comprising six related species, and *Dasyrhicnoessa* Hendel with two species. In my opinion *Afrotethina* is monophyletic and well distinguished from *Tethina* Haliday and *Dasyrhicnoessa*. According to Munari (1988), *Afrotethina* is probably the sister-group of *Dasyrhicnoessa*.

Thanks to the kind assistance of Dr B. R. Stuckenberg (Pietermaritzburg) I was able to examine the 86 tethinid flies preserved in the collection of the Natal Museum, this being the material upon which this paper is based.

TAXONOMY

Horaismoptera grisea (Seguy, 1933)

Distribution: Namibia, South Africa.

Material examined: NAMIBIA: 6♂5♀, Swakop River Mouth nr Swakopmund, 22°41'S:14°32'E, 14.vii.1988, B.R. Stuckenberg, brackish pools near beach.

A large species, commonly found in South Africa. It is very probable that this taxon is the junior synonym of *H. microphthalma* (Bezzi, 1908) described from Lüderitz Bay, Namibia (see Sabrosky, 1978). In my opinion the examination of Bezzi's type will be necessary to confidently establish this synonymy, but this has unfortunately not been located.

Horaismoptera Hendel includes two other species, viz. *hennigi* Sabrosky [Sri Lanka] and *vulpina* Hendel [Egypt, Iran, Oman, Abd al Kury (near Socrotra), Madagascar]. As to the systematics of this peculiar genus, refer to Sabrosky (1978) and Munari (1986).

Tethina (*Rhicnoessa*) sp.

Material examined: SOUTH AFRICA: *Cape Province*: 1♀, Arniston 3420CA, 22–23.x.1964, Stuckenberg.

It is not possible to place this species based on a single female. *Tethina* is poorly represented in subequatorial Africa. Only two species are recorded from this large region, viz. *T. minutissima* (Bezzi) [South Africa] and *T. ochracea* (Hendel) [widely distributed from the Mediterranean to Taiwan]. Refer also to Munari (1990) and Munari (in press), where *T. ochracea* is reported as *T. canzonerii* Munari.

Dasyrhicnoessa ferruginea (Lamb, 1914)

Distribution: Indopacific, Madagascar (new record).

Material examined: MADAGASCAR: 9♂, Diégo Suarez, 30 m, 4–9.xii.1957, B. Stuckenberg; 1♂, Fenerive, on beach, xii.1955, B. Stuckenberg; 1♂, Ivontaka, 15 m, dct Mananara, 10–14.iii.1958, B. Stuckenberg.

Afrotethina aurisetulosa (Lamb, 1914)

Distribution: Aldabra, Cosmoledo, Madagascar (new record) and Mozambique (new record).

Material examined: MADAGASCAR: 2♂2♀, Fenerive, lagoon shore/on beach, xii.1955, B. Stuckenberg; 2♂2♀, Saint Augustin, 6 m, dct Tuléar, 11–13.ii.1958, B. Stuckenberg. MOZAMBIQUE: 2♂, Lourenco Marques, Polana beach, i.1956, B. Stuckenberg.

This species is well characterised by its bright yellow colour and golden bristles and hairs (see species key).

Afrotethina brevicostata Munari, 1990

Distribution: Aldabra, South Africa (new record).

Material examined: SOUTH AFRICA: *Natal*: 1♂, Umhloti mouth, on seashore, 19.vi.1962, B. & P. Stuckenberg.

Afrotethina femoralis (Munari, 1981)

Distribution: Kenya, Madagascar (new record), South Africa (new record).

Material examined: MADAGASCAR: 1♂1♀, Fenerive, on beach, xii.1955, B. Stuckenberg; 7♀, Sainte-Luce, 10 m, dct Fort-Dauphin, 22–24.ii.1958, B. Stuckenberg. SOUTH AFRICA: *Natal*: 11♂6♀1?, Umkomaas beach, 9.xii.1954, B. Stuckenberg. *Transkei*: 1♂1♀, Port St Johns, 20–25.xi,1961,

B. & P. Stuckenberg. *Cape Province*: 1♂2♀, Kleinemonde, above seaweed, 19.i.1957, Day; 1♀, same data except 4.i.1957.

This species was described from Kenya in *Pseudorhicnoessa* Malloch, 1914. It was recently transferred to *Afrotethina* (Munari, in press).

Afrotethina persimilis sp. n.

Figs 1–2

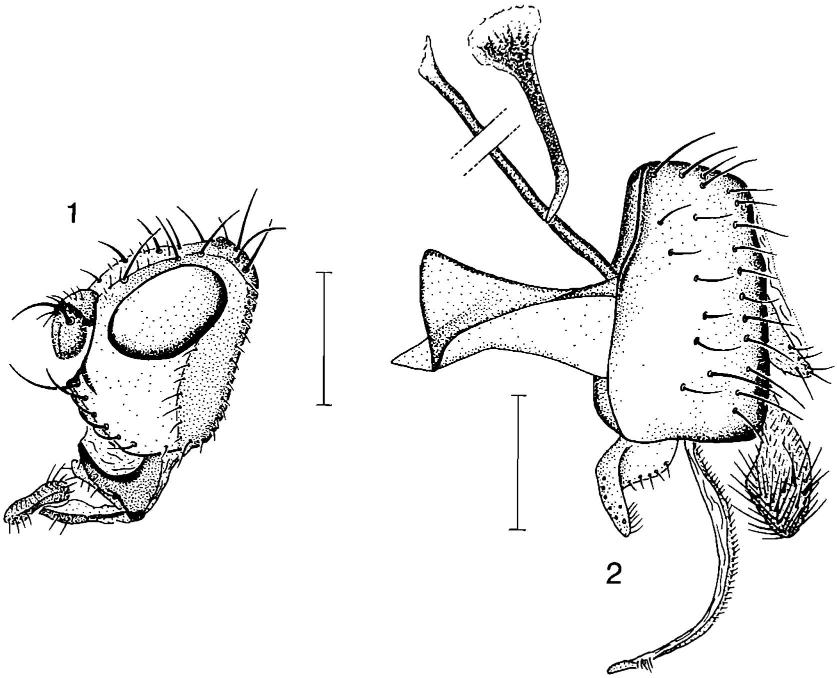
Etymology: Named for its close morphological affinity with *A. stuckenbergi* Munari.

Dimensions: Body length 2,4–2,8 mm (female paratype lacking abdomen, thus not measured); wing length 2,05–2,20 mm, width 0,79–0,82 mm.

Habitus: Small species with weakly sclerotised tegument. Body with generally dark ground colour and cinerous microtomentum. Wings yellowish.

Description:

Head: Mostly yellow but cervico-occipital and ocellar regions much darker with grey microtomentum. poc hair-like, convergent; vti inwardly directed as with shorter pavt; vte long and outwardly directed. Ocellar triangle dark with divergent hairs and strong ocellars. Frons yellow: 3 outwardly directed orbital bristles



Figs 1–2. *Afrotethina persimilis* sp. n. 1. Head, lateral view, scale line = 0,4 mm. 2. Male genitalia, lateral view, scale line = 0,1 mm.

and 4–6 short hairs. Four interfrontal bristles, intermixed with short hairs. Antenna yellowish; arista short and dark. Eye small, transversely elongate and ellipsoid; diameter 1,22–1,57 times genal width (Fig. 1). Facial region and gena yellow; gena very broad. Vibrissal and peristomal bristles strong. Buccal apparatus with shining brown sclerites.

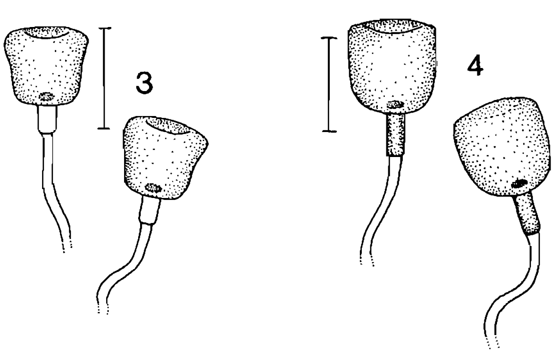
Thorax: Dark, with grey microtomentum and black bristles. 1 + 3 dc, 4 rows of very irregular acr (prescutellars long and erect). Postpronotal lobe with 3 strong bristles, each with different inclination. 1 presutural, 2 notopleurals, 2 supra-alars (the lower one weakly developed), 2 postalars (outer bristle and apical scutellar of similar length). Scutellum triangular with four marginal bristles and pubescent disc. Proepimeral and proepisternal bristles well developed. Anepisternum with scattered pubescence and 3–4 postero-marginal bristles (the medial one much longer and stronger); erect bristle also present on postero-dorsal margin. Katepisternum pubescent, with long black posterodorsal bristle. Both katatergite and meron without bristles.

Legs: Slender, bicoloured; coxae, trochanters and femora dark, similar to pleurae and covered with bluish-grey microtomentum. Femora setulose. Tibiae and tarsi mostly yellowish and with only scattered pubescence; mid tibia with ventro-apical black spur; hind tibia similarly with antero-ventral apical spur. Male hind femur markedly swollen.

Wing: Veins and membrane yellowish. Costal index 3,25–3,40; costa not or indistinctly extended beyond R_{4+5}. R_{2+3} and R_{4+5} moderately divergent. M_1 slightly sinuous. Alula subtriangular. Halteres pale yellowish.

Abdomen: Dark, with bluish-grey dusting, moderately long hairing and narrow yellow transverse stripes apically on terga (male) or with homogeneous grey microtomentum and no stripes (female). Male genitalia (Fig. 2): Gonostylar process barely pubescent on anterior hook-like lobe; posterior lobe strongly setulose and with unusual blunt shape.

Type material: Holotype ♂, NAMIBIA: Swakop River mouth near Swakopmund, 22°41'S:14°32'E, 14.vii.1988, B.R. Stuckenberg, brak [brackish] pools near



Figs 3–4. Spermathecae of *Afrotethina* Munari. 3. *A. aurisetulosa* (Lamb). 4. *A. aemiliani* Munari. Scale lines = 0,05 mm.

beach. Paratypes: 1♂1♀, same data. All deposited in Natal Museum (NM Type No. 372). [The holotype and paratype males have the detached and dissected abdomen preserved in glycerine in plastic microvials pinned below respective specimens; the female paratype has a handwritten label: 'abdomen lost during dissection'.]

Discussion: This new species is closely related to *A. stuckenbergi* Munari, but differs in having ellipsoidal and smaller eyes, 4 irregular rows of acrostichal hairs and very distinct male genitalia.

The Swakop River mouth is closed, with an accumulation of salty water near the beach; the type material was collected in the vicinity of adjacent kelp and other marine debris.

Afrotethina stuckenbergi Munari, 1990

Distribution: South Africa.

Material examined: SOUTH AFRICA: *Cape Province*: 3♂11♀, Arniston, 3420CA, 22–23.x.1964, Stuckenberg; 1♀, Hondeklipbaai, 3017Ad, sea level, coastal dunes, 8.ix.1972, M.E. & B.J. Irwin.

This species is closely related to *A. persimilis* sp. n., but differs in having narrower genae, subcircular eyes, 6 rows of acrostichal hairs and distinct male genitalia.

Key to species of *Afrotethina* Munari

Species are not very distinctive (based on external morphology and chaetotaxy), so the following key should be regarded as provisional. Characters used are consistent, although additional material is required to verify some of them.

1 Costal vein distinctly extended beyond R_{4+5}, reaching apex of M_{1+2}. Ground colour pale, yellowish except for brown and pale striped abdomen. Bristles and hairs with golden reflections. Genae narrow, diameter of eye 3,7–4,3 times genal width 2

— Costal vein not or indistinctly extended beyond R_{4+5}. Ground colour darker or strongly dark grey. Bristles black, sometimes with indistinct golden reflections. Genae broad, diameter of eye 1,2–2,6 times genal width 3

2 Ground colour pale yellow (except for striped brown abdomen). Bristles and hairs golden yellow, mainly pale. Postpronotal lobe and mesonotum concolorous, mesonotum covered with homogeneous, fine microtomentum. Male genitalia (see Munari 1988, Figs 5–8); female spermathecae (Fig. 3) .... **aurisetulosa** (Lamb)

— Head, pleurae and legs mostly yellow but mesonotum and abdomen brown. Bristles with golden reflections, mostly dark. Postpronotal lobe pale yellow dorsally, contrasted with brown mesonotum; mesonotum with median dark stripe, this always present as a broad band in prescutellar region and narrower anteriorly between postpronotal lobes. Male genitalia (see Munari 1986, Figs 1–6); female spermathecae (Fig. 4) .... **aemiliani** Munari

3 Legs entirely yellow in both sexes. Thorax pale, cinerous-grey dusted. Bristles dark with golden reflections, hairs golden. Ocellar triangle and cervico-occipital region pale grey dusted, weakly contrasted with yellow frons. Male genitalia (see Munari 1990, Figs 1–3); female postabdomen and spermathecae (see Munari 1990, Figs 4–7) .... **brevicostata** Munari

— Legs, at least in male, with darker femora, grey or bluish-grey dusted. Bristles and hairs of body and legs without clearly visible golden reflections (except *A. femoralis*). Ocellar triangle and cervico-occipital region dark grey dusted, strongly contrasted with yellow frons, particularly in male 4

4 Fore and hind femora pale in male (darker in large specimens), often slightly pale grey dusted; femora entirely pale yellow in female. Hind femur of male swollen, with antero-ventral comb of irregular, bristle-like spines in distal third. Bristles and hairs of body with golden reflections when viewed laterally. Male genitalia (Munari in press, Fig. 1); female spermathecae (Munari in press, Fig. 2) .... **femoralis** (Munari)

— Femora mostly dark, grey or bluish-grey dusted in both sexes. Hind femur of male not as swollen and without antero-ventral comb of spines in distal third. Bristles and hairs of body without golden reflections 5

5 Acrostichal hairs in 6 irregular rows (between second pair of dorsocentral bristles). Gena not particularly broad; eye subcircular, diameter 1,50–2,16 times genal width. Male genitalia (see Munari 1990, Figs 8–10); female postabdomen and spermathecae (see Munari 1990, Figs 11–13) .... **stuckenbergi** Munari

— Acrostichal hairs in 4 (occasionally 5), very irregular rows (between second pair of dorsocentral bristles). Gena broad; eye ellipsoidal, transverse (Fig. 1), diameter 1,22–1,57 times genal width. Male genitalia (Fig. 2); female postabdomen not examined .... **persimilis** sp. n.

REFERENCES

BEZZI, M. 1908. Simuliidae, Bombyliidae, Empididae, Syrphidae, Tachinidae, Muscidae, Phycodromidae, Borboridae, Trypetidae, Ephydridae, Drosophilidae, Geomyzidae, Agromyzidae, Conopidae. *In*: Zoologische und anthropologische Ergebnisse einer Forschungsreise im westlichen und zentralen Südafrika ausgeführt in den Jahren 1903–1905. Erster Band: Systematik und Tiergeographie. IV. Insecta (Erste Serie). D. Diptera (1). *Denkschr. med.-naturw. Ges. Jena* **13**: 179–201.

COGAN, B. H. 1980. Family Tethinidae. *In*: Crosskey R. W., ed. *Catalogue of the Diptera of the Afrotropical Region*. London: British Museum (Natural History). pp. 693.

LAMB, C. G. 1914. The Percy Sladen Trust expedition to the Indian Ocean in 1905, under the leadership of Mr J. Stanley Gardiner, M.A. Vol. 5. No. XV.—Diptera: Heteroneuridae, Ortalidae, Trypetidae, Sepsidae, Micropezidae, Drosophilidae, Geomyzidae, Milichidae. *Trans. Linn. Soc. Lond.* (2: Zool.) **16**: 307-372.

MALLOCH, J. R. 1914. Formosan Agromyzidae. *Annls hist.-nat. Mus. natn. hung.* **12**: 306–336.

MUNARI, L. 1981. Sul genere *Pseudorhicnoessa* Malloch, 1914 (Diptera, Tethinidae). *Lavori Soc. Ven. Sc. Nat.* **6**: 91–96.

——— 1986. Contributo alla conoscenza dei Tethinidae Afrotropicali. II. Considerazioni tassonomiche sulla sottofamiglia Horaismopterinae Sabr, e descrizione di un genere e due specie nuove (Diptera, Tethinidae). *Lavori Soc. Ven. Sc. Nat.* **11**: 41–52.

——— 1988. Contributo alla conoscenza dei Tethinidae Afrotropicali. III. I Tethinidae dell'arcipelago delle Seychelles (Diptera, Tethinidae). *Lavori Soc. Ven. Sc. Nat.* **13**: 41–53.

——— 1990. Contributo alla conoscenza dei Tethinidae Afrotropicali. IV. Tethinidae raccolti ad Aldabra dalla 'Aldabra Atoll Royal Society Expedition (1967–68)' e nel Sud Africa da R. E. Turner e B. & P. Stuckenberg, con descrizione di due nuove specie (Diptera, Acalyptratae). *Lavori Soc. Ven. Sc. Nat.* **15**: 51–68.

——— (in press). Contributo alla conoscenza dei Tethinidae Afrotropicali. V. Aggiornamenti sistematici e biogeografici.

Sabrosky, C. W. 1978. The family position of the peculiar genus *Horaismoptera* (Diptera Tethinidae). *Entomol. Germ.* **4** (3–4): 327–336.

Séguy, E. 1933. Contributions à l'étude de la faune du Mozambique. Voyage de M. P. Lesne (1928–1929). 13ᵉ note. Dipterès (2ᵉ partie). *Mems Estud. Mus. zool. Univ. Coimbra* **67**: 5–80.

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